

## Author index

Bandwar, R.P. 157  
Blaschke, G. 139  
Bogulska, M. 91  
Bøgwald, J. 225

Castronuovo, G. 127  
Chankvetadze, B. 139  
Chapelle, S. 37  
Chapron, Y. 21  
Coplin, D. 59  
Crouzy, S. 21  
Čudić, M. 1

Dabrowski, J. 91  
Dabrowski, U. 91  
Debouzy, J.-C. 21  
Domke, T. 59

Edebrink, P. 225  
Elia, V. 127  
Elofsson, M. 1  
Endresz, G. 139

Fauvelle, F. 21  
Fessas, D. 127  
Fritzell, T.H. 77  
Furneaux, R.H. 101

Geider, K. 59  
Gigg, J. 263  
Gigg, R. 263  
Göschl, M. 21  
Gradnig, G. 49  
Gray, J.S.S. 203

Hemmingson, J.A. 101  
Hoffman, J. 225  
Horvat, J. 1  
Horvat, Š. 1  
Hubbard, R.E. 247

Jakubetz, H. 139  
Jansson, P.-E. 225  
Jenkins, D.J. 169  
Juza, M. 139

Katzenellenbogen, E. 91  
Kihlberg, J. 1  
Kimura, A. 255  
Kitahata, S. 213  
Klaveness, J. 77  
Koizumi, K. 213  
Kojić-Prodić, B. 1  
Krishnakumar, R.V. 117

Legler, G. 49

Manley-Harris, M. 183  
Matulová, M. 37  
Milinković, V. 1  
Moll, H. 123  
Montana, J.G. 247  
Montgomery, R. 203  
Moriyón, I. 123  
Mort, A. 59  
Murphy, P.V. 247  
Murray-Brown, V.H. 101

Nasu, A. 271  
Natarajan, S. 117  
Nimtz, M. 59

Oguma, T. 271  
Okada, Y. 213

Potter, B.V.L. 169

Qiu, F. 59

Rao, C.P. 157  
Richards, G.N. 183

Robyt, J.F. 255  
Romanowska, E. 91  
Rongved, P. 77

Schurig, V. 139  
Strande, P. 77  
Stütz, A.E. 49

Taylor, R.J.K. 247  
Tobe, K. 271

Uchida, R. 271

Velasco, J. 123  
Velleca, F. 127  
Verchère, J.-F. 37  
Vinogradov, E.V. 123  
Viscardi, G. 127

Wray, V. 59

Yamaji, N. 271  
Yang, B.Y. 203

Zähringer, U. 123  
Zhang, Y. 59

## Subject index

### 2-Acetamido-1,2-dideoxynojirimycin

A novel approach to the 1-deoxynojirimycin system: synthesis from sucrose of 2-acetamido-1,2-dideoxynojirimycin, as well as some 2-*N*-modified derivatives 49

### Acyloxymethyl esters

The one-pot esterification of phosphoric acids with silver carbonate and alkyl halides in refluxing toluene 263

### Adenophostin

A  $\text{Ca}^{2+}$ -mobilising carbohydrate-based polyphosphate: synthesis of 2-hydroxyethyl  $\alpha$ -D-glucopyranoside 2',3,4-trisphosphate 169

### Agar polysaccharides

Biosynthesis of agar polysaccharides in *Gracilaria chilensis* Bird, McLachlan *et al.* Oliveira 101

### Amino acid

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

### Amino acid complexes

Crystal structure of an adduct of sarcosine with sucrose 117

### Amino acid linker

Polysaccharides as carriers for magnetic resonance imaging contrast agents: synthesis and stability of a new amino acid linker derivative 77

### Biodegradable phosphate esters

The one-pot esterification of phosphoric acids with silver carbonate and alkyl halides in refluxing toluene 263

### Biosynthesis

Biosynthesis of agar polysaccharides in *Gracilaria chilensis* Bird, McLachlan *et al.* Oliveira 101

### Calorimetry

Thermodynamics of the interaction of  $\alpha$ -cyclodextrin with monocarboxylic acids in aqueous solutions: a calorimetric study at 25 °C 127

### Capillary electrophoresis (CE)

Analysis of charged cyclomalto-oligosaccharides (cyclodextrin) derivatives by ion-spray, matrix-assisted laser-desorption/ionization time-of-flight and fast-atom bombardment mass spectrometry, and by capillary electrophoresis 139

### Chlorosulfonyl group

Glycosylation reactions of 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -L-fucopyranosyl chloride and 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -D-xylopyranosyl chloride 247

### <sup>13</sup>C Labelling

Biosynthesis of agar polysaccharides in *Gracilaria chilensis* Bird, McLachlan *et al.* Oliveira 101

### <sup>13</sup>C NMR

Furanose vs. acyclic forms of carbohydrate ligands. A multinuclear NMR spectroscopy study of the molybdate and tungstate complexes of D-glycero-L-manno-heptose 37

### Contrast agents

Polysaccharides as carriers for magnetic resonance imaging contrast agents: synthesis and stability of a new amino acid linker derivative 77

### Cyclodextrin

Investigation of the  $\alpha$ -cyclodextrin-*myo*-inositol phosphate inclusion complex by NMR spectroscopy and molecular modeling 21

### $\alpha$ -Cyclodextrin

Thermodynamics of the interaction of  $\alpha$ -cyclodextrin with monocarboxylic acids in aqueous solutions: a calorimetric study at 25 °C 127

## Cyclodextrin derivatives

Analysis of charged cyclomalto-oligosaccharides (cyclodextrin) derivatives by ion-spray, matrix-assisted laser-desorption/ionization time-of-flight and fast-atom bombardment mass spectrometry, and by capillary electrophoresis 139

## Cyclomaltodextrinase

A convenient preparation of maltooctase and maltononaose by the coupling reaction of cyclomaltodextrinase 271

Cyclomaltohexaose ( $\alpha$ CD), heterogeneous doubly branched

Isolation by HPLC of the positional isomers of heterogeneous doubly branched cyclomaltohexaose having one  $\alpha$ -D-galactosyl and one  $\alpha$ -D-glucosyl side chain and determination of their structures by enzymatic degradation 213

## 1-Deoxynojirimycin

A novel approach to the 1-deoxynojirimycin system: synthesis from sucrose of 2-acetamido-1,2-dideoxynojirimycin, as well as some 2-*N*-modified derivatives 49

## Dipeptide

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

## Enzymatic degradation

Isolation by HPLC of the positional isomers of heterogeneous doubly branched cyclomaltohexaose having one  $\alpha$ -D-galactosyl and one  $\alpha$ -D-glucosyl side chain and determination of their structures by enzymatic degradation 213

## Enzymatic synthesis

A convenient preparation of maltooctase and maltononaose by the coupling reaction of cyclomaltodextrinase 271

## ESIMS

Analysis of charged cyclomalto-oligosaccharides (cyclodextrin) derivatives by ion-spray, matrix-assisted laser-desorption/ionization time-of-flight and fast-atom bombardment mass spectrometry, and by capillary electrophoresis 139

## FABMS

Analysis of charged cyclomalto-oligosaccharides (cyclodextrin) derivatives by ion-spray, matrix-assisted laser-desorption/ionization time-of-flight and fast-atom bombardment mass spectrometry, and by capillary electrophoresis 139

## Fructose dianhydrides

Di-D-fructose dianhydrides and related oligomers from thermal treatments of inulin and sucrose 183

## L-Fucose

Glycosylation reactions of 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -L-fucopyranosyl chloride and 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -D-xylopyranosyl chloride 247

## Galactopyranose

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

## Gelatinized starch granules

Reaction of enzymes with starch granules: reaction of isoamylase with native and gelatinized granules 255

## GLC-MS spectroscopy

Determination of the *O*-specific polysaccharide structure in the lipopolysaccharide of *Ochrobactrum anthropi* LMG 3331 123

## Glycan

The glycans of horseradish peroxidase 203

## Glycosidase inhibitors

A novel approach to the 1-deoxynojirimycin system: synthesis from sucrose of 2-acetamido-1,2-dideoxynojirimycin, as well as some 2-*N*-modified derivatives 49

## Glycosylation

Glycosylation reactions of 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -L-fucopyranosyl chloride and 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -D-xylopyranosyl chloride 247

## Glycosyl chloride

Glycosylation reactions of 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -L-fucopyranosyl chloride and 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -D-xylopyranosyl chloride 247

*Gracilaria chilensis*

Biosynthesis of agar polysaccharides in *Gracilaria chilensis* Bird, McLachlan *et al.* Oliveira 101

## D-glycero-L-manno-Heptose

Furanose vs. acyclic forms of carbohydrate ligands. A multinuclear NMR spectroscopy study of the molybdate and tungstate complexes of D-glycero-L-manno-heptose 37

## Horseradish peroxidase

The glycans of horseradish peroxidase 203

## HPLC

Isolation by HPLC of the positional isomers of heterogeneous doubly branched cyclomalto-

- hexaose having one  $\alpha$ -D-galactosyl and one  $\alpha$ -D-glucosyl side chain and determination of their structures by enzymatic degradation 213
- Inclusion**  
Thermodynamics of the interaction of  $\alpha$ -cyclodextrin with monocarboxylic acids in aqueous solutions: a calorimetric study at 25 °C 127
- Inclusion complex**  
Investigation of the  $\alpha$ -cyclodextrin-*myo*-inositol phosphate inclusion complex by NMR spectroscopy and molecular modeling 21
- Inositol phosphates**  
A  $\text{Ca}^{2+}$ -mobilising carbohydrate-based polyphosphate: synthesis of 2-hydroxyethyl  $\alpha$ -D-glucopyranoside 2',3,4-trisphosphate 169  
The one-pot esterification of phosphoric acids with silver carbonate and alkyl halides in refluxing toluene 263
- Inulin thermolysis**  
Di-D-fructose dianhydrides and related oligomers from thermal treatments of inulin and sucrose 183
- Isoamylase**  
Reaction of enzymes with starch granules: reaction of isoamylase with native and gelatinized granules 255
- Lipopolysaccharide**  
Determination of the O-specific polysaccharide structure in the lipopolysaccharide of *Ochrobactrum anthropi* LMG 3331 123  
Structural studies of the *Vibrio salmonicida* lipopolysaccharide 225
- Magnetic resonance imaging**  
Polysaccharides as carriers for magnetic resonance imaging contrast agents: synthesis and stability of a new amino acid linker derivative 77
- MALDITOF**  
The glycans of horseradish peroxidase 203
- MALDITOFMS**  
Analysis of charged cyclomalto-oligosaccharides (cyclodextrin) derivatives by ion-spray, matrix-assisted laser-desorption/ionization time-of-flight and fast-atom bombardment mass spectrometry, and by capillary electrophoresis 139
- Maltononaose**  
A convenient preparation of maltooctaose and maltononaose by the coupling reaction of cyclomaltodextrinase 271
- Maltooctaose**  
A convenient preparation of maltooctaose and maltononaose by the coupling reaction of cyclomaltodextrinase 271
- Maltose-Mn(II) complex**  
Transition-metal-saccharide chemistry: synthesis and characterisation of D-galactose, D-fructose, D-glucose, D-xylose, D-ribose, and maltose complexes of Mn(II) 157
- Methylation analysis**  
The glycans of horseradish peroxidase 203
- Mn(II) complexes**  
Transition-metal-saccharide chemistry: synthesis and characterisation of D-galactose, D-fructose, D-glucose, D-xylose, D-ribose, and maltose complexes of Mn(II) 157
- Modification of starch granules**  
Reaction of enzymes with starch granules: reaction of isoamylase with native and gelatinized granules 255
- Molecular dynamics**  
Investigation of the  $\alpha$ -cyclodextrin-*myo*-inositol phosphate inclusion complex by NMR spectroscopy and molecular modeling 21
- Molybdate complexes**  
Furanose vs. acyclic forms of carbohydrate ligands. A multinuclear NMR spectroscopy study of the molybdate and tungstate complexes of D-glycero-L-manno-heptose 37
- Monocarboxylic acids**  
Thermodynamics of the interaction of  $\alpha$ -cyclodextrin with monocarboxylic acids in aqueous solutions: a calorimetric study at 25 °C 127
- Monosaccharide-Mn(II) complexes**  
Transition-metal-saccharide chemistry: synthesis and characterisation of D-galactose, D-fructose, D-glucose, D-xylose, D-ribose, and maltose complexes of Mn(II) 157
- Myo-inositol 2-phosphate**  
Investigation of the  $\alpha$ -cyclodextrin-*myo*-inositol phosphate inclusion complex by NMR spectroscopy and molecular modeling 21
- Native starch granules**  
Reaction of enzymes with starch granules: reaction of isoamylase with native and gelatinized granules 255
- N-glycation**  
Preparation and structural characterization of N-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-O-isopropylidene- $\alpha$ -D-galactopyranose moiety 1
- N-linked oligosaccharides**  
The glycans of horseradish peroxidase 203

## NMR

Structural studies of the *Vibrio salmonicida* lipopolysaccharide 225

## NMR spectroscopy

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

Investigation of the  $\alpha$ -cyclodextrin-*myo*-inositol phosphate inclusion complex by NMR spectroscopy and molecular modeling 21

Determination of the O-specific polysaccharide structure in the lipopolysaccharide of *Ochrobactrum anthropi* LMG 3331 123

## Nonulosonic acid

Structural studies of the *Vibrio salmonicida* lipopolysaccharide 225

*Ochrobactrum anthropi*

Determination of the O-specific polysaccharide structure in the lipopolysaccharide of *Ochrobactrum anthropi* LMG 3331 123

## Piperazinedione

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

## Polysaccharides

Polysaccharides as carriers for magnetic resonance imaging contrast agents: synthesis and stability of a new amino acid linker derivative 77

## Positional isomer, separation

Isolation by HPLC of the positional isomers of heterogeneous doubly branched cyclomaltohexaose having one  $\alpha$ -D-galactosyl and one  $\alpha$ -D-glucosyl side chain and determination of their structures by enzymatic degradation 213

## Salmon

Structural studies of the *Vibrio salmonicida* lipopolysaccharide 225

## Sarcosine

Crystal structure of an adduct of sarcosine with sucrose 117

## Second messenger

A  $\text{Ca}^{2+}$ -mobilising carbohydrate-based polyphosphate: synthesis of 2-hydroxyethyl  $\alpha$ -D-glucopyranoside 2',3,4-trisphosphate 169

## Selective protection

A  $\text{Ca}^{2+}$ -mobilising carbohydrate-based polyphosphate: synthesis of 2-hydroxyethyl  $\alpha$ -D-glucopyranoside 2',3,4-trisphosphate 169

## Silver carbonate

The one-pot esterification of phosphoric acids with silver carbonate and alkyl halides in refluxing toluene 263

## Single crystal

Crystal structure of an adduct of sarcosine with sucrose 117

## O-Specific polysaccharide

Determination of the O-specific polysaccharide structure in the lipopolysaccharide of *Ochrobactrum anthropi* LMG 3331 123

## Stability

Polysaccharides as carriers for magnetic resonance imaging contrast agents: synthesis and stability of a new amino acid linker derivative 77

## Stannylene

A  $\text{Ca}^{2+}$ -mobilising carbohydrate-based polyphosphate: synthesis of 2-hydroxyethyl  $\alpha$ -D-glucopyranoside 2',3,4-trisphosphate 169

## Structural analysis

Isolation by HPLC of the positional isomers of heterogeneous doubly branched cyclomaltohexaose having one  $\alpha$ -D-galactosyl and one  $\alpha$ -D-glucosyl side chain and determination of their structures by enzymatic degradation 213

## Structure

Structural studies of the *Vibrio salmonicida* lipopolysaccharide 225

## Sucrose

A novel approach to the 1-deoxynojirimycin system: synthesis from sucrose of 2-acetamido-1,2-dideoxynojirimycin, as well as some 2-*N*-modified derivatives 49

Crystal structure of an adduct of sarcosine with sucrose 117

## Sucrose thermolysis

Di-D-fructose dianhydrides and related oligomers from thermal treatments of inulin and sucrose 183

## Thermolysis of sugars

Di-D-fructose dianhydrides and related oligomers from thermal treatments of inulin and sucrose 183

## Tungstate complexes

Furanose vs. acyclic forms of carbohydrate ligands. A multinuclear NMR spectroscopy study of the molybdate and tungstate complexes of D-glycero-L-manno-heptose 37

<sup>183</sup>W NMR, Furanose forms

Furanose vs. acyclic forms of carbohydrate ligands. A multinuclear NMR spectroscopy study of the molybdate and tungstate complexes of D-glycero-L-manno-heptose 37

## X-ray

Crystal structure of an adduct of sarcosine with sucrose 117

## X-ray structure

Preparation and structural characterization of *N*-glycated amino acid and linear or cyclic dipeptides containing the 6-amino-6-deoxy-1,2:3,4-di-*O*-isopropylidene- $\alpha$ -D-galactopyranose moiety 1

## D-Xylose

Glycosylation reactions of 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -L-fucopyranosyl chloride and 2,3,4-tri-*O*-chlorosulfonyl- $\beta$ -D-xylopyranosyl chloride 247

